

PROJECT NUMBER: 2500  
PROJECT TITLE: Fundamental Chemistry  
PROJECT LEADER: J. I. Seeman  
PERIOD COVERED: September 1988

I. FLAVOR/ODOR CHEMISTRY (Houminer, Paine, Seeman)

- A. Objective: To develop new technologies for smoke deliveries of desired flavorants; to prepare new substances for flavor/odor evaluation; to develop methodologies for the analysis of subjective data.
- B. Results and Plans: Plans for new smoke studies related to flavor release and MS/SS deliveries are being prepared. A number of series of substrates are being evaluated. A new constant temperature bath has been installed and some thermolyses of pyrazine ethanols are in progress.

One of the diastereomers of a tetramethylpyrazine (TMP): alcohol release agent has been purified. Initial preparation of a new series of TMP release agents is underway.

II. CHEMICAL PHYSICS STUDIES OF TOBACCO CONSTITUENTS (Secor, Seeman)

- A. Objective: To obtain structural information about important tobacco constituents/flavorants; to develop information on cluster formation and chemical reactions in clusters.
- B. Results and Plans: A number of substituted aromatics were prepared and sent to E. R. Bernstein. Reports have been completed on laser jet studies of alkyl, alkoxy, and allylbenzenes and drafts are in progress on other work.

III. REMOVAL OF NICOTINE FROM AQUEOUS TOBACCO PROCESSING FLUIDS (Hassam, Seeman)

- A. Objective: To develop techniques to remove nicotine and other tobacco alkaloids from aqueous tobacco processing fluids to the exclusion of all other components.
- B. Results and Plans: Studies with Sepracor continue. Preparations for the installation of a bench scale membrane system is in progress. Nicotine has now been successfully separated from a model aqueous scrubber liquid and concentrated by a factor of >14.

IV. MISCELLANEOUS (Hassam, Secor)

Results and Plans: Studies continue on the development of TLC methods for TSNA analyses. A special report on [C-<sup>14</sup> glycerol was issued. The preparation of polyalkylcyclodextrins for use as

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mobile phase additives in GC has begun; a candidate compound was prepared and purified (by R. Izac) by HPLC.

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